

expert opinion of a reconstructive physiotherapist has been obtained concerning the possibilities of improving the deformity by further treatment with physical measures.

References:

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THE IMPORTANCE OF THE VEGETATIVE SYSTEMS, NERVOUS AND ENDOCRIN TO CLINICAL MEDICINE.*

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It is unnecessary to emphasize before a group of neurologists that the study of the nervous system furnishes the basis for understanding the clinical manifestations of disease. It is necessary, however, to emphasize that neurology as a specialty, as practiced in the past, largely left out of account that branch of the subject which is of greatest importance to general medicine, and consisted too much of recognizing hopeless organic nervous diseases, localizing cord and brain lesions, and diagnosing and differentiating various forms of mental diseases. By thus limiting the field, neurology has so far withheld from itself the honor which rightly belongs to it of being the foundation structure through which disease expresses itself, and has offered little inspiration or help to the student of general medicine. This, however, is now in the process of change, and with this change there is developing an interest in disturbances in that portion of the nervous system which presides over organic function; and, in those forms of mental distress which accompany every disease and which of themselves produce many symptoms. These are commonly found in the every-day practice of medicine and are amenable to treatment. I refer to altered relationship in the vegetative nervous system and to psychopathologic states with their many functional disturbances.

This broader field comprises a study of the physiologic control of the organism; the nervous system, both voluntary and vegetative, and the system of endocrin glands. It further comprises a study, on the one hand, of the manner in which these systems are affected by psychical as well as physical stimuli, and, on the other hand, of the manner in which the physical and psychical systems are affected by nervous and endocrin stimuli.

In the developmental stage of what we are pleased to term modern medicine, through which we are now passing, laboratory study and specialization have dominated the field. There has been a tendency to magnify the importance of certain lines of study and to minimize others; to magnify the part at the expense of the whole. There has been too much of a tendency to treat special branches of medicine as entities apart from the

general subject. This idea has been further fostered by the prevailing tendency to consider the disease apart from the patient.

The error of this attitude has been gradually forcing itself upon the leading thinkers in all specialties, with the result that they are beginning to realize that their special subjects are only minor branches of the whole, and the importance of general medicine is again being emphasized as it has not been since the dawn of specialization. No group of physicians should be able better to understand the disintegrating influence of specialization and the harmful effects of illogically developing the study of parts and systems apart from the whole, than neurologists, for their study leads them more than any other group of specialists to study the patient and his reactions and to an investigation of those structures of the body which control normal activity and through which abnormal activity is expressed. No other group of men should appreciate so fully the unity of the human organism and the incompleteness of the grasp of present-day medicine which has so exalted the study of disease and which has attempted to divide diseases into those of this and that organ or system. No disease is limited to a given organ or system. Every disease affecting the human body should be looked upon as a disease of the whole organism. The general action may not be evident in some of the minor maladies; yet there can be no pathologic process so slight that it does not affect nerve or endocrin control, and through these exert an influence upon other parts of the body.

As the body is a unit, so should medicine be a unit; and diseases should be studied with reference to their effect upon the body as a whole. Neurologists are the only members of our profession who have been giving the major portion of their time to the study of the patient's reactions during the era now passing, in which the disease and disease process has been emphasized in contradistinction to the patient. The neurologist has studied the nervous and psychic side of the patient, but unfortunately instead of recognizing the broadness of this study and the manner in which it underlies the entire study of medicine, he has in much the same manner as the gastroenterologist, the heart, the lung, the ear and eye specialist, developed his subject in its narrow aspects and not in its relationship to medicine as a whole.

It is now time for neurology and psychopathology to be enlarged and studied in their broadest aspects. What this broad aspect is, can be appreciated best by considering man as a physiologically functioning organism which is obliged to adapt itself to a physical and social environment. If this organism could develop normally and thereafter always remain in a favorable environment and be spared harmful stimuli, there would be no physical disease and no pathologic psychical states. But such is not the case. Along with the continuous flow of normal sensory stimuli which reaches the higher centers over the peripheral sensory nerves, the reaction to which makes the normal man, there come also many harmful stimuli, some of which arise from definite disease-

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producing factors such as micro-organisms, others that result from abnormal strength of normal stimuli. Some of these are sufficiently strong to disturb normal adjustments, causing functional disturbances and producing the condition which we recognize as disease.

Disease declares itself by symptoms, that is, by disturbed function. So long as function is unimpaired a disease process is making no impression on the physiologic activity of the organ. We can conceive of disease processes being present, yet failing to cause recognizable symptoms. In such instances the nerves are capable of withstanding the stimuli produced by the pathologic process and of still performing their function normally, or the process expresses itself in symptoms which we fail to recognize.

This we see in some of the minor maladies, and also at times in many of the more serious chronic diseases. There comes a time in many of the latter when we speak of an arrestment of the clinical activity, although the pathologic process is not removed. This is illustrated in such diseases as tuberculosis, malaria and syphilis. The patient may be free from the usually recognized symptoms, although the disease is not healed.

In medicine, because of the dominance of pathologic anatomy over pathologic physiology, we have caused much confusion by dividing diseases into organic and functional. We have assumed the attitude that functional diseases are unworthy of scientific attention. But now, just when this opinion is well established, we have learned that our judgment was wrong and that diseases express themselves in disturbed function, known as symptoms, and that disturbances in function are of importance to the organism, whether they are caused directly by a disease process in the organ affected, or are expressions of disturbed nerve balance, the origin of which is in some distant structure, or are produced by psychic unbalance.

Symptoms according to medical teaching are divided into two classes, subjective and objective. Those of the latter group are often called signs, which confuses and might suggest that they are caused differently. The former are noticed by the patient himself, and the latter are recognized by the observer. They are all disturbances in function and should be classed as symptoms, no matter how observed. A rapid pulse, a high blood pressure, a lagging chest wall, a disturbed innervation in the larynx, a dilated pupil are just as much symptoms as pain, malaise, cough, dyspnoea, heartburn, deafness, and disturbed vision. These are, one and all, produced by a disturbance in the normal physiologic activity of the tissues or organs affected.

In the past our efforts have had the effect of confusing instead of clarifying these disturbed relationships. Particularly has this been true in the symptomatology of visceral disease. We have looked upon symptoms as entities, when, instead they should be considered as disturbances in the normal working of the human machine. Symptoms do not necessarily belong to the organ or part in which they are expressed. Hilton, in that

great contribution to medicine, "Rest and Pain," recognized this fact with reference to visceral pain. He says: "When a patient is suffering from pain in any part, he is instinctively inclined to believe that he must also be suffering from inflammation in that part. Pain, as we all know, is not by itself an indication of an inflammatory state, nor is redness, nor is swelling; for any or all of these may coexist without local inflammation"; again: "Pain in any part, when not associated with increase of temperature, must be looked upon as caused by an exalted sensitiveness of the nerves of the part, and as a pain depending upon a cause situated remotely from the part where it is felt." And further: "I would ask you to regard them (pains) as resulting from some direct nervous communication passing between the part where the pains are expressed and the real and remotely situated cause of the pain."

This quotation from Hilton expresses the essence of symptoms of visceral disease—a disease expresses itself not only anatomically but physiologically. In fact, there are certain syndromes which are recognized as diseases, such as hay fever, and asthma, which have no known pathologic anatomic basis. This same is true of the functional disturbances which are caused by psychopathologic states. I know of no disease, however, which does not have a pathologic physiologic basis. The physiologic expression is the one of greatest importance to the patient. A grasp of this conception removes high and low blood pressure from diseases of the circulatory system, and places them in general medicine. It shows that most of the symptoms on the part of the gastrointestinal canal do not arise in the canal itself, but in structures which are reflexly connected with it. It removes most diseases which are expressed by pain in the chest and abdominal wall from the surface of the body to underlying viscera. The same may be said of the secretory disturbances of the various important organs of the body, in fact, of all disturbed function. A disturbed function of an organ calls for a knowledge of the nerve connections of that organ and an understanding of what local and general causes may be operating to influence its nerve supply. All of this requires a grasp of the body as a whole and emphasizes the fact of the unity of the human organism and likewise the unity of the study of its diseases—the unity of medicine. Every important disease should be studied in its pathologic anatomic, pathologic biochemical, pathologic physiologic and psycho-pathologic aspects.

Nerve relationships, endocrin secretions and their actions, the effect of the discharge of physical and psychical stimuli during health must be studied intently by the neurophysiologist until they are understood and made the common property of the medical profession. To this end neurophysiology must be earnestly studied. It offers a promising field for the best minds in medicine today. When this has been accomplished, the task of interpreting the pathologic reactions in the presence of disease will be greatly facilitated and medicine will be stripped of much of its con-

fusion and mysticism. It is to the neurologist and the psychopathologist that we look for guidance in this important field of medical research.

Neurology in this broadened sense will assert itself as the basis upon which the future structure of medicine may be constructed, in which all the parts as represented by the many specialties today will take their place and be molded into the unified whole.

Hilton, John: "Rest and Pain," 1913, Twelfth Edition, p. 70 and 71, G. Bell & Sons, Ltd., London.

THE ETIOLOGY OF PARENCHYMATOUS NEPHRITIS

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A consideration of the etiology of acute and chronic nephritis presupposes a definition of the term nephritis, and here one is confronted with evasions, contradictions and confusion. Twenty years ago a definition¹ of nephritis was "An acute inflammation of the kidneys, more or less diffuse in nature. It may be either of a mild, severe or grave character." This definition was acceptable at that time for the lack of a better one, but the conception of nephritis as a disease is undergoing modification. Herrick² says: "By the term nephritis is meant an inflammation of the kidneys. As it is commonly employed, a non-suppurative inflammation is implied." Rose³ says: "Nephritis is usually defined as an inflammation of the kidneys, although it may be admitted that many of the conditions included under this heading might be more correctly described as due to a toxic action on the renal element." Christian⁴ reflects a more modern conception and implies an acceptance of Rose Bradford's toxic theory of nephritis in his definition, which is, "Nephritis is a diffuse, progressive, degenerative or proliferative lesion, involving renal parenchyma, or interstitial tissue, or both." I believe we should now go a step further and say that acute nephritis is a general disease of a toxic nature which, as a rule, involves the kidneys, but does not necessarily do so. Franke⁵ describes acute nephritis without albuminuria or acute functional disturbances of the kidneys and without casts or albumen in urine associated with a soft painless rapidly progressing general edema and edema of the lungs without evidences of cardiac failure. The following case from my records may be considered also illustrative of this contention.

A woman, 22 years of age, in excellent general health, suffered an attack of acute follicular tonsillitis which lasted four or five days. Two weeks later she awakened one morning with general edema, more pronounced in the face and eyelids, and to a less extent the entire body. There was decided diminution in urinary excretion. The urine showed a specific gravity of 1026, no albumen, no casts. There were no retinal or cardiac

alterations; headache was very severe. She was treated as if she were suffering from acute nephritis by rest in bed and rigid milk diet. Diuresis was established the following day; specific gravity of the urine was 1010, no albumen, no casts. The third day there was a very faint trace of albumen, but no casts. The fourth and fifth days, a very faint trace of albumen and a few hyaline casts were present. By the eighth day, the urinary findings were entirely normal and the edema had entirely disappeared.

It is to be noted in this case that the kidneys did not show clinical evidence of disease at the height of her period of general edema. When first seen the history of very severe headaches, pronounced general acute edema, anuria and history of acute tonsillitis two weeks before presented the usual clinical picture of a moderately severe acute nephritis except that the urine showed no albumen or casts. It is difficult to conceive that the toxic symptoms of acute nephritis are due to the kidney lesion. However, a distinction must be made between the symptoms of acute nephritis, as in the general acceptance of the term, and the manifestations of uræmia. Such evidences of an intoxication in acute nephritis as headache, edema, retinal hemorrhage, may undoubtedly be considered to be due to some toxic substance, generally of bacterial origin, or due to poisoning by inorganic chemical substances, such as mercuric chloride. Uræmia is a fairly well defined entity, which is dependent upon a reduction of the functioning power of the kidneys. Uræmic symptoms associated with advanced destruction of kidney substance are very different from the symptoms marking an acute parenchymatous nephritis except where great involvement of the kidney tissue results in interference with renal function. The chief manifestation of acute nephritis is edema. If edema were due to failure of kidney function, then in all cases in which destruction of the kidney substance is present, edema should occur, which, however, is not the case. As is well known, if the kidneys of a dog are removed the animal dies of uræmia without edema. Patients die of chronic interstitial nephritis and of chronic diffuse nephritis without edema. An illustrative case is as follows:

J. A. C., male, 29 years old; on February 1 vomited several times and immediately thereafter suffered three severe uræmic convulsions followed by coma, recovering consciousness twelve hours later. As far as he knew, his health up to that day had been excellent. Between that time and April 28, he had had two vomiting spells and headache, but no other indications of ill-health. Upon examination, four months after his convulsions, he felt entirely well, but was passing three liters of urine a day, had lost twenty-seven pounds in weight. The urine was of low specific gravity, 1010; 0.4 per cent albumin, numerous hyaline casts and red blood corpuscles. There was pronounced anaemia—haemoglobin, 54 per cent, red cells, 3,220,000. His phthalein output was less than 5 per cent for two hours. There was hypertrophy of the left ventricle; blood pressure was 190 systolic, 100 diastolic. (To be concluded in October.)